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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/606,753	06/27/2003	Robert B. Magill	2376.2431-001	5555

57690 7590 11/20/2009

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EXAMINER	
O CONNOR, BRIAN T	

ART UNIT	PAPER NUMBER
2475	

MAIL DATE	DELIVERY MODE
11/20/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/606,753	MAGILL ET AL.	
	Examiner	Art Unit	
	Brian O'Connor	2475	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *16 July 2009*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-19* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-19* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. This office action is in response to applicant's amendment filed on 7/16/2009.

2. Claims 1-19 are currently pending.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1 and 6 are rejected under 35 U.S.C. 102(e) as being anticipated by Hoof (US 7,203,193).

With respect to claim 1, Hoof discloses an apparatus for packet switching (20, 14, 22 of Figure 1; Abstract) built with a number of input queues (ICU_1, ICU_2, 10 of Figure 1; 20 of Figure 2), a number of output queues (ECU_1, ECU_2, 12 of Figure 1; 22 of Figure 4), and a switch fabric (14 of Figure 1) connected the input queues to the output queues. The switch fabric (14 of Figure 1; viewed as equivalent to a switch fabric because it multiplexes packet data between input and output queues) contains memory (40 of Figure 3) and stored incoming packets with a buffer (42 of Figure 4). The apparatus also has a number of controllers (52 of Figure 3, 32 of Figure 2; 78 of

Figure 4) for determining packet priority and movement from input queues to output queues (column 4, lines 10-14; column 6, lines 20-25). The input and output queues have separate scheduling priorities (32 of Figure 2; 78 of Figure 4).

With respect to claim 6, Hoof further discloses that the fabric switch (14 of Figure 1) is a buffered cross switch fabric (42, 46 of Figure 3).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 2, 3, 8, 9, 11, 12, and 17-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hoof in view of Chao et al. (Chao et al., "Delay-Bound Guarantee in Combined Input-Output Buffered Switches", 1 December 2000, IEEE GLOBECOM 2000, Volume 1, pg 515-524; hereafter Chao).

With respect to claim 2, Hoof does not specifically disclose the controller ordering cells in the switch fabric based on times in of cells to depart, wherein cells with lower times of cells to depart have higher output priorities.

Chao discloses that the fabric orders the transmission of cells to the output queues by virtual finishing time and the cells with the smallest virtual finishing time have the highest priority (Step 3: Accept, left column, pg 517 – first paragraph, right column, pg 517).

Chao teaches the benefit of sharing excess bandwidth for packet flows through a switch fabric (pg 515, right column, last partial paragraph). Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to use the method of Chao with the apparatus of Hoof.

With respect to claim 3, Hoof does not specifically disclose the controller determining that cells of input queues are blocked from moving to the switch fabric, wherein cells of input queues have respective time of the cells to depart, wherein cells in the switch fabric have respective times of the cells to depart, wherein if the cells are blocked from moving to the switch fabric, a cell in the switch fabric has a lower time to depart than the blocked cell.

Chao discloses that the IPC1 and OPC1 examine the virtual finishing time of all cells in the input queues and moves the cell with the lowest or smallest virtual finishing time across to the output queues (Step 1: Selection and request; Step 2: Grant; Step 3: Accept on left and right columns of pg 517). Cells become blocked from entering and moving to the switch when their virtual finishing times are too large; and the cells are stored in the switch as they move across it.

Chao teaches the benefit of sharing excess bandwidth for packet flows through a switch fabric (pg 515, right column, last partial paragraph). Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to use the method of Chao with the apparatus of Hoof.

With respect to claim 8, Hoof discloses an apparatus for packet switching (20, 14, 22 of Figure 1; Abstract) built with a number of input queues (ICU_1, ICU_2, 10 of Figure 1; 20 of Figure 2), a number of output queues (ECU_1, ECU_2, 12 of Figure 1; 22 of Figure 4), and a switch fabric (14 of Figure 1) connected the input queues to the output queues. The switch fabric (14 of Figure 1; viewed as equivalent to a switch fabric because it multiplexes packet data between input and output queues) contains memory (40 of Figure 3) and stored incoming packets with a buffer (42 of Figure 4). The apparatus also has a number of controllers (52 of Figure 3, 32 of Figure 2; 78 of Figure 4) for determining packet priority and movement from input queues to output queues (column 4, lines 10-14; column 6, lines 20-25). The input and output queues have separate scheduling priorities (32 of Figure 2; 78 of Figure 4).

Hoof does not specifically disclose the controller ordering cells in the switch fabric based on times in of cells to depart, wherein cells with lower times of cells to depart have higher output priorities.

Chao discloses that the fabric orders the transmission of cells to the output queues by virtual finishing time and the cells with the smallest virtual finishing time have the highest priority (Step 3: Accept, left column, pg 517 – first paragraph, right column, pg 517).

Chao teaches the benefit of sharing excess bandwidth for packet flows through a switch fabric (pg 515, right column, last partial paragraph). Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to use the method of Chao with the apparatus of Hoof.

With respect to claim 9, Hoof does not disclose updating cells after highest priority cells in the switch fabric are transferred from the switch fabric to the output queues and after transfer of the highest priority cells then transfer of input queues to the switch fabric.

Chao further that the cells with highest priority or minimum virtual finishing time are transferred by the IPC operations (last paragraph, right column, pg 519 --- first paragraph, left column, pg 520) and then the remaining cells are updated by a Xoj server during OAP(min) in the OAP operation phase (lines 1-3, left column, pg 521).

Chao teaches the benefit of sharing excess bandwidth for packet flows through a switch fabric (pg 515, right column, last partial paragraph). Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to use the method of Chao with the apparatus of Hoof.

With respect to claim 11, Hoof further discloses a plurality of input schedules (multiple 32 of Figure 2), a flow-control mechanism (column 4, lines 57-64), and a fabric scheduler (44 of Figure 3).

With respect to claim 12, Hoof further discloses a plurality of crosspoint schedulers (multiple 44 of Figure 3).

With respect to claim 17, Hoof discloses an method for packet switching (20, 14, 22 of Figure 1; Abstract) using a number of input queues (ICU_1, ICU_2, 10 of Figure 1; 20 of Figure 2), a number of output queues (ECU_1, ECU_2, 12 of Figure 1;

22 of Figure 4), and a switch fabric (14 of Figure 1) connected the input queues to the output queues. The switch fabric (14 of Figure 1; viewed as equivalent to a switch fabric because it multiplexes packet data between input and output queues) contains memory (40 of Figure 3) and stored incoming packets with a buffer (42 of Figure 4). The apparatus also has a number of controllers (52 of Figure 3, 32 of Figure 2; 78 of Figure 4) for determining packet priority and movement from input queues to output queues (column 4, lines 10-14; column 6, lines 20-25). The input and output queues have separate scheduling priorities (32 of Figure 2; 78 of Figure 4). Hoof also teaches flow-control information (column 4, lines 57-64).

Hoof does not specifically disclose the controller ordering cells in the switch fabric based on times in of cells to depart, wherein cells with lower times of cells to depart have higher output priorities.

Chao discloses that the fabric orders the transmission of cells to the output queues by virtual finishing time and the cells with the smallest virtual finishing time have the highest priority (Step 3: Accept, left column, pg 517 – first paragraph, right column, pg 517).

Chao teaches the benefit of sharing excess bandwidth for packet flows through a switch fabric (pg 515, right column, last partial paragraph). Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to use the method of Chao with the method of Hoof.

With respect to claim 18, Hoof does not specifically disclose cell storing in input queues according to input priorities and cells storing in memory of the switch fabric according to output priorities.

Chao discloses storing cells in the input queues according to their virtual finishing times or priorities (IPC operation, last paragraph, right column, pg 519) and the cells are moved through the switch memory based on the output queue's virtual time function or its output priority (OAP operation, second paragraph, left column, pg 520).

Chao teaches the benefit of sharing excess bandwidth for packet flows through a switch fabric (pg 515, right column, last partial paragraph). Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to use the method of Chao with the method of Hoof.

With respect to claim 19, Hoof does not specifically disclose that each timeslot further repeating selecting, updating, selected and transferring, and updating flow-control.

Chao discloses that the steps for moving the cells across the switch are repeated for each cell in the queue, i.e. for each time slot in the queue (first paragraph, left column, pg 517 – last paragraph, right column, pg 517).

Chao teaches the benefit of sharing excess bandwidth for packet flows through a switch fabric (pg 515, right column, last partial paragraph). Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to use the method of Chao with the method of Hoof.

7. Claims 4, 5, and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hoof in view of Chuang et al. (Chuang et al., "Matching Output Queueing with a Combined Input/Output-Queued Switch", 30 June 1999, IEEE Journal on Selected Areas in Communications, Volume 17, pg 1030-1039; hereafter Chuang) cited in IDS dated 10/29/2003.

With respect to claim 4, Hoof does not disclose the controllers determining an incoming cell's priority based on the time of the cell departing from an output queue and the times of other cells in the output queue to depart.

Chuang, in an invention of a cell-switching device, discloses a technique of inserting an incoming cell based on the number of cells in the output buffer with a smaller "time to leave" than the incoming cell (CCF Insertion Policy in second paragraph, left column, pg 1034).

Chuang realizes the advantage of less stall time for incoming cells that need to leave the switch faster due to Quality of Service demands. Thus it would have been obvious to one of ordinary skill in the art at the time of the invention to use the technique of Chuang with the switch of Hoof.

With respect to claim 5, Hoof does not disclose the controller setting input and output priorities based on lowest time-to-leave scheduling, lowest time-to-leave blocking, and non-negative slackness insertion.

Chuang, in an invention of a cell-switching device, disclose a technique of input and output priority settings based on lowest time-to-leave scheduling (GBVOQ Algorithm, third paragraph, right column, pg 1035 where "**the cell which arrived earlier**

will have a smaller TL (Time-to-Leave) and hence a higher output priority"), lowest time-to-leave blocking (GBVOQ Algorithm, third paragraph, right column, pg 1035 where "**to determine which of two cells has a higher output priority, we just need to compare the arrival timestamps of the two cells**"), and non-negative slackness insertion (CCF Insertion Policy in second and third paragraphs, left column, pg 1034).

Chuang realize the advantage of greater speedup values for packet switching with these scheduling techniques (the "OQ switch" advantage in third paragraph, right column, pg 1030). Thus it would have been obvious to one of ordinary skill in the art at the time of the invention to use the technique of Chuang with the switch of Hoof.

With respect to claim 7, Hoof does not disclose the switch emulating an output queued packet switch.

Chuang, in an invention of a cell-switching device, disclose a technique to emulate an output queued packet switch by using lowest time-to-leave scheduling (GBVOQ Algorithm, third paragraph, right column, pg 1035 where "**the cell which arrived earlier will have a smaller TL (Time-to-Leave) and hence a higher output priority**"), lowest time-to-leave blocking (GBVOQ Algorithm, third paragraph, right column, pg 1035 where "**to determine which of two cells has a higher output priority, we just need to compare the arrival timestamps of the two cells**"), and non-negative slackness insertion (CCF Insertion Policy in second and third paragraphs, left column, pg 1034).

Chuang realize the advantage of greater speedup values for packet switching with these scheduling techniques (the "OQ switch" advantage in third paragraph, right

column, pg 1030). Thus it would have been obvious to one of ordinary skill in the art at the time of the invention to use the technique of Chuang with the switch of Hoof.

8. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hoof in view of Chao and further in view of Chuang.

With respect to claim 10, Hoof does not disclose the controllers determining an incoming cell's priority based on the time of the cell departing from an output queue and the times of other cells in the output queue to depart.

Chuang, in an invention of a cell switching device, discloses a technique of inserting an incoming cell based on the number of cells in the output buffer with a smaller "time to leave" than the incoming cell (CCF Insertion Policy in second paragraph, left column, pg 1034).

Chuang realizes the advantage of less stall time for incoming cells that need to leave the switch faster due to Quality of Service demands. Thus it would have been obvious to one of ordinary skill in the art at the time of the invention to use the technique of Chuang with the switch of Hoof.

9. Claims 13 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hoof in view of Chao and further in view of Rojas-Cessa et al. (Rojas-Cessa et al., "CIXB-1: Combined Input-One-cell-Crosspoint Buffered Switch", 31 May 2001, 2001 IEEE Workshop on High Performance Switching and Routing, pg 324-329; hereafter Rojas-Cessa) cited in IDS dated 10/29/2003.

With respect to claim 13, Hoof fails to disclose that the input queues are build from several virtual output queues.

Rojas-Cessa, in a related switch invention, discloses a switch with virtual output queues (VOQs) at the input ports (Input 0, Input N-1 of Figure 1; fifth paragraph, left column, pg 326, second bullet states "**Input Queue: There are VOQs at the input ports. A VOQ at input I that stores cells for output j is denoted VOQi,j**").

Rojas-Cessa teaches the advantage of increased throughtput by using VOQs in the switch (second paragraph, right column, pg 324). Thus it would have been obvious to one of ordinary skill in the art at the time of the invention to use the switch structure of Rojas-Cessa with the switch of Hoof.

With respect to claim 14, Hoof fails to disclose a switch containing multiple crosspoint buffers and having the crosspoint buffers connects to virtual output queues (VOQs).

Rojas-Cessa, in a related switch invention, discloses a switch with virtual output queues (VOQs) at the input ports (Input 0, Input N-1 of Figure 1; fifth paragraph, left column, pg 326, second bullet states "**Input Queue: There are VOQs at the input ports. A VOQ at input I that stores cells for output j is denoted VOQi,j**") and connected crosspoint buffers (XPB of Figure 1).

Rojas-Cessa teaches the advantage of increased throughtput by using VOQs in the switch (second paragraph, right column, pg 324) and crosspoint buffers (fourth paragraph, right column, pg 325). Thus it would have been obvious to one of ordinary

skill in the art at the time of the invention to use the switch structure of Rojas-Cessa with the switch of Hoof.

10. Claims 15 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hoof in view of Chao and further in view of Zhang (Zhang, "Service Disciplines for Guaranteed Performance Service in Packet-Switching Networks", 31 October 1995, Proceedings of the IEEE, pg 1374-1396).

With respect to claim 15, Hoof fails to disclose input queues that contain first-in-first-out (FIFO) groups.

Zhang, in a related field of endeavor, teaches FIFOs groups sharing a single link (Section B: WFQ and WF2Q, first paragraph, right column, pg 1378; "**these is a separate FIFO queue for each connection sharing the same link**").

Zhang realizes the advantage of increases quality of service offers by group the FIFOs in a single link (Section B: WFQ and WF2Q, first paragraph, right column, pg 1378; "**FFQ allows different connections to have different service shares**"). Thus it would have been obvious to one of ordinary skill in the art at the time of the invention to use the technique of Zhang with the switch of Hoof.

With respect to claim 16, Hoof further discloses a plurality of crosspoint schedulers (multiple 44 of Figure 3).

Hoof fails to disclose input queues that contain first-in-first-out (FIFO) groups.

Zhang, in a related field of endeavor, teaches FIFOs groups sharing a single link (Section B: WFQ and WF2Q, first paragraph, right column, pg 1378; "**these is a separate FIFO queue for each connection sharing the same link**").

Zhang realizes the advantage of increases quality of service offers by group the FIFOs in a single link (Section B: WFQ and WF2Q, first paragraph, right column, pg 1378; "**FFQ allows different connections to have different service shares**"). Thus it would have been obvious to one of ordinary skill in the art at the time of the invention to use the technique of Zhang with the switch of Hoof.

Response to Arguments

11. Applicant's arguments filed on 7/16/2009 have been fully considered but they are not persuasive.

A) Applicant argues with respect to claims 1 and 6, see page 2 in last partial paragraph, that "Hoof does not disclose a 'switch fabric storing cells [moved from input queues to the switch fabric] based on ... output queues,' as required by Applicant's Claim 1".

The Examiner maintains the rejection because Hoof teaches the PBU and ECU exchanging messages to prepare for a moving a packet to the ECU from the PBU. "If a receiving ECU has enough space in its appropriate queue, it queues a memory reference contained in the notification that may be used to retrieve the packet, and transmits an indication to the PBU, referred to as a booking message, that the address has been queued for causing the PBU to keep the packet in memory until it is requested." (column 3, lines 61-67) The PBU is storing the packet based on the booking message from the ECU and that message is based on the queues space in the ECU.

B) Applicant argues with respect to claims 1 and 6, see page 3 in first partial paragraph, that "such storage is not based on output queues".

The Examiner maintains the rejection because Hoof teaches the PBU and ECU exchanging messages to prepare for a moving a packet to the ECU from the PBU. "If a receiving ECU has enough space in its appropriate queue, it queues a memory reference contained in the notification that may be used to retrieve the packet, and transmits an indication to the PBU, referred to as a booking message, that the address has been queued for causing the PBU to keep the packet in memory until it is requested." (column 3, lines 61-67) The PBU is storing the packet based on the booking message from the ECU and that message is based on the queues space in the ECU.

C) Applicant argues with respect to claims 1 and 6, see page 3 in first partial paragraph, that "Storage of packets at Hoof's PBU is not (and cannot be) based on Hoof's ECU, much less output queues at ECUs".

The Examiner maintains the rejection because Hoof teaches the PBU and ECU exchanging messages to prepare for a moving a packet to the ECU from the PBU. "If a receiving ECU has enough space in its appropriate queue, it queues a memory reference contained in the notification that may be used to retrieve the packet, and transmits an indication to the PBU, referred to as a booking message, that the address has been queued for causing the PBU to keep the packet in memory until it is requested." (column 3, lines 61-67) The PBU is storing the packet based on the

booking message from the ECU and that message is based on the queues space in the ECU.

D) Applicant argues with respect to claims 1 and 6, see page 3 in first full paragraph, that "changing Hoof to make storage at a PBU based on egress ports would required substantial modification (and would not server any purpose)."

The Examiner maintains the rejection because Hoof teaches the PBU and ECU exchanging messages to prepare for a moving a packet to the ECU from the PBU. "If a receiving ECU has enough space in its appropriate queue, it queues a memory reference contained in the notification that may be used to retrieve the packet, and transmits an indication to the PBU, referred to as a booking message, that the address has been queued for causing the PBU to keep the packet in memory until it is requested." (column 3, lines 61-67) The PBU is storing the packet based on the booking message from the ECU and that message is based on the queues space in the ECU. There is no change required to Hoof because Hoof's teaching anticipated the limitation "said switch fabric storing cells based on said output queues" in claim 1.

E) Applicant argues with respect to claims 2, see page 4 in third full paragraph, that "Chao does not stores cells at Chao's switch fabric but rather passes them straight through to an output buffer. Therefore, Chao cannot teach storage at a switch fabric based on departure times."

The Examiner maintains the rejection because Hoof teaches the switch fabric to store packets and Chao teaches using departure times of packets. In the combination of Hoof and Chao, the storage packet in Hoof's PBU would be based on departure times

as taught in Chao to produce a functioning and predictable result of a switch fabric ordering packets based on departure times.

Conclusion

12. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian O'Connor whose telephone number is (571)270-1081. The examiner can normally be reached on M-F, 9AM-5:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dang Ton can be reached on 571-272-3171. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Brian T. O'Connor
November 17, 2009
Patent Examiner

/DANG T TON/

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